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EXAMINER	
CHOI, PETER H	

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/893,091	SHETTY ET AL.	
	Examiner	Art Unit	
	Peter Choi	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *08 September 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a non-final office action upon examination of application number 09/893,091. Based upon the Applicant's Appeal Brief, prosecution on the merits of the claimed invention has been reopened. Claims 1-60 are pending in the application and have been examined on the merits discussed below.

2. The Office Action below has been updated to clarify the rationale used in the basis of rejection of claims 1-60.

Response to Arguments

Applicant asserts that the rejection of claims 1-3, 11-21, and 31-60 under 35 U.S.C. 112, first paragraph, is improper.

The Examiner respectfully disagrees. Based on the Examiner's understanding of the graceful decrement (and the equation by which it is derived), the unit analysis shows that the graceful decrement is the number of days by which production time is reduced if one less product were to be produced. As presented in the previous Office Action, for purposes of an art rejection, the Examiner has interpreted each citation of the graceful decrement to be a reference to the change in production time resulting from reducing

the number of products involved in a product request order (i.e., instead of products X and Y being produced, only product X is produced). If the Examiner's interpretation of the graceful decrement is not in agreement with that of the Applicant, clarification is required.

Applicant argues that the Examiner has improperly attempted to redefine the inverse of the probability of profit as a probability of non-profitability.

The Examiner respectfully disagrees. As presented in the previous Office Action, the Examiner asserted that, mathematically, an inverse is defined to be one of a pair of elements in a set whose result under the operation of the set is the identity element, especially the reciprocal of a designated quantity (i.e., the inverse of the probability of the profit would be the probability of non-profitability). For example, in math, the inverse of two-tenths is five (the reciprocal of 0.2 is 5, because 1 divided by 0.2 is 5). While the Applicant is entitled to act as his/her own lexicographer, the Examiner is merely stating that the term "inverse" is used in a manner other than its traditional mathematical definition. Weight has not been given to the ***name*** "inverse" as used by the Applicant, but rather the ***mathematical equation*** defined by the Applicant (Table 4 of the Applicant's specification). Based on the Applicant's equation, the inverse profit probability appears to be the complement of the weighted profitability of an item. The example in the specification defines the profit probability of product "B" as 1-($3996/($3330+$3996))), which is 0.454545. This is in agreement with the Examiner's

interpretation. From the profit of all products in the order (products A and B), the amount of profit from one product (product B) is 0.545454. The "inverse profit probability" seeks to find the complement of the profitability of a product (1-0.545454 = 0.454545). If a true inverse were to be calculated, the inverse profit probability would be 1.8333 (1 divided by 0.454545). Since the value of a probability of an event can never be a value greater than 1, performing a true "inverse" of the profit probability would not yield a mathematically valid answer. Therefore, the Examiner has assumed that the Applicant is acting as his/her own lexicographer, using the term "inverse" in a manner that differs from its traditional mathematical meaning; the Examiner has interpreted every citation of the "inverse profit probability" as the percentage of profit of each product within a plurality of products.

Applicant argues that the Examiner has admitted that Kennedy does not disclose or suggest an inverse profit probability.

The Examiner respectfully disagrees. Based upon the Examiner's understanding and interpretation of the claimed "inverse profit probability", the Examiner asserts that Kennedy teaches an equivalent function. Kennedy performs the same functionality as the "inverse profit probability" as defined by the Applicant. Kennedy finds the most profitable product from a group of products (thus calculating the profitability of all products and then selecting the most profitable product). The Applicant's "inverse profit

probability" determines the complement of the profit probability of a product (i.e., identifying the profitability for each product).

Applicant disagrees with the Examiner's conclusion that the Applicant has failed to adequately traverse the Examiner's Official Notice, and consequently, that the Applicant has waived any challenge to Official Notice.

As per MPEP 2144.03(c), the statements of Official Notice were taken as admitted prior art because no traversal of said statements was made in the subsequent response. To adequately traverse a statement of Official Notice, the Applicant must specifically point out the supposed errors in the Examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art.

As previously presented, there are minimum requirements for a challenge to Official Notice:

(a) In general, a challenge, to be proper, must contain adequate information or arguments so that *on its face* it creates a reasonable doubt regarding the circumstances justifying the Official Notice

(b) Applicants must seasonably traverse (challenge) the taking of Official Notice as soon as practicable, meaning the next response following an Office Action. If

an applicant fails to seasonably traverse the Official Notice during examination, his right to challenge the Official Notice is waived.

Official Notice was first taken on the first Office Action on the merits, mailed October 7, 2005. In the subsequent response, received January 9, 2006, the Applicant attempted to address the takings of Official Notice by attempting to traverse each official notice rejection.

Bald statements such as, "the Examiner has not provided proof that this element is well known" or "applicant disagrees with the Examiner's taking of Official Notice and hereby requests evidence in support thereof" or "Applicant traverses each Official Notice rejection", are not adequate and do not shift the burden to the Examiner to provide evidence in support of the Official Notice. The Applicant did not specifically point out the supposed errors in the Examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art.

Applicant has not provided adequate information or arguments so that *on its face* it creates a reasonable doubt regarding the circumstances justifying the Official Notice. Therefore, the presentation of a reference to substantiate the Official Notice is not deemed necessary. The Examiner's taking of Official Notice has been maintained.

The Applicant asserts that the Examiner has failed to provide a proper showing that the missing disclosure of claims 1 and 19 are inherently taught.

The Examiner asserted that it is inherent that "once an agreement has been made regarding a customer order (product mix and quantity), said order would be communicated to production and manufacturing facilities to being processing of the customer order". Kennedy relates in general to the fields of order fulfillment, order quoting, available-to-promise, purchasing, supplier management, supply chain management, and single- and multi-enterprise planning [Column 1, lines 6-12]. In these fields, once an order is received, it is communicated to relevant parties (i.e., production, manufacturing, procurement, delivery) so that said order is fulfilled.

Applicant disagrees with the Examiner's statement that "the percentage of profits from a particular product.. can be determined by dividing the profit of one product into the product of all profits.." and that ".. the combined percentages of profitability of all products in an order must add to 100%.

The Examiner will attempt to clarify the statements cited above. The Examiner continues to assert that product profitability of an order is only derived from the products that comprise an order. For example, a customer order comprises product X and product Y. The order results in a profit of $10, $6 from product X, and $4 from product Y. Product X accounts for 60% of the profit of the order, Product Y accounts for 40% of

the profit of the order, and Product Z accounts for 0% of the profit of the order. The profitability of items in an order are limited to items that comprise the order. As such, product Z does not contribute to the profitability of the order, because product Z was not sold in said order. The percentage of a quantity that is less than said quantity is less than 100% (i.e., profit from product X cannot be 120% because product X was not the sole product that comprises said order). Kennedy finds the most profitable product from a group of products (thus calculating the profitability of all products and then selecting the most profitable product); thus, the cited statements of inherency are present in the determination (of the most profitable product from a group of products) step of Kennedy.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-3, 11-21, and 31-60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

From the equation provided on page 14 of the specification for the graceful decrement,

$$\delta t_i = \frac{(\Delta T) * (\text{profit probability})}{(\text{current number of products}) - 1}$$

the units involved are ΔT (days), profit probability (no unit), current number of products (no unit).

The resulting unit analysis provides (days * a number)/(a number) = days.

The graceful decrement is supposed yield a reduced number of products; however, using the formula provided, determines a reduced number of days (resulting from one less product). For the purposes of the following art rejection, the Examiner has interpreted each citation of the graceful decrement to be a reference to the change in production time resulting from reducing the number of products involved in a product request order (i.e., instead of products X and Y being produced, only product X is produced).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-3, 19-21, 39-40, 46-49, and 54-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. (U.S Patent #6,055,519).

As per claim 1, a computerized **(computer implemented)** method for production management comprising:

determining a reduced quantity of a requested product quantity in a customer order **(figure out whether filing that request is possible or whether an alternate plan is possible {such as delivering fewer items})** in reference to the probability of profit **(invention can be used in sales environments for the purpose of optimizing the profits of the seller)** of the product [Column 6, lines 26-33]; and

communicating the reduced quantity **(seller proposes to the buyer a promise to ship items at a certain quantity and date, the buyer thinks about the promise and either reissues an altered request or accepts the promise)** [Column 6, lines 37-42].

Although Kennedy et al. does not explicitly teach the step of communicating the reduced quantity to a production management process, Kennedy relates in general to the fields of order fulfillment, order quoting, available-to-promise, purchasing, supplier management, supply chain management, and single- and multi-enterprise planning [Column 1, lines 6-12]. Thus, it is inherent that once an agreement has been made regarding a customer order (product mix and quantity), said order would be

communicated to production and manufacturing facilities to begin processing of the customer order for fulfillment by the supply chain.

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller [Column 6, lines 26-28]; thus, Kennedy et al., implicitly teaches the step of identifying of the most profitable products of a group of products that would enable the maximization of profits {in order to identify the ***most*** profitable product, the profitability of ***all*** products must be known}. In addition, it has been admitted as prior art, as a result of improperly and/or untimely challenged Official Notice, that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the probability of product profitability into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution

of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

Claim 19 recites limitations already addressed by the rejection of claim 1 above; therefore, the same rejection applies.

As per claim 2, the computerized method of claim 1, wherein the determining further comprises:

iteratively determining a graceful reduction of the requested product quantity from a time shortfall **(figure out whether filing that request is possible {due to a time shortfall} or whether an alternate plan is possible {such as delivering fewer items})**, from the profit probability **(invention can be used in sales environments for the purpose of optimizing the profits of the seller)**, and from a reduced number of plurality of products **(figure out whether an alternate plan is possible {such as delivering fewer items})**, until the customer accepts the reduced quantity or until the time shortfall is non-existent **(seller proposes to the buyer a promise to ship items at a certain quantity and date, the buyer thinks about the promise and either reissues an altered request to which the seller must generate a new promise, or the buyer or accepts the promise {which completes the negotiation [the negotiation process therefore being an iterative process]})** [Column 6, lines 26-42].

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller [Column 6, lines 26-28]. In addition, it has been admitted as prior art, as a result of improperly and/or untimely challenged Official Notice, that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

Claim 20 recites limitations already addressed by the rejection of claim 2 above; therefore, the same rejection applies.

As per claim 3, Kennedy et al. teaches the computerized method of claim 1, the method further comprising:

determining that the requested product quantity can not be satisfied **(whether fulfillment of a customer request is possible)** within a customer target time period **(customer request data regarding relevant items, quantities, and dates are stored)** [Column 3, line 64-67, Column 6, lines 30-31].

Claim 21 recites limitations already addressed by the rejection of claim 3 above; therefore, the same rejection applies.

As per claim 39, Kennedy et al. teaches a computer-readable medium having stored thereon a data structure representing a reduced quantity of a requested product quantity produced by a method comprising:

determining that the quantity of the requested product can not be satisfied by a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** within a customer target time period [Column 6, lines 26-42]; and

iteratively determining a graceful reduction of the requested product quantity from a time shortfall **(figure out whether filing that request is possible {due to a time shortfall} or whether an alternate plan is possible {such as delivering fewer items})**, from the inverse profit probability **(invention can be used in sales environments for the purpose of optimizing the profits of the seller)**, and from a reduced number of plurality of products **(figure out whether an alternate plan is possible {such as delivering fewer items})**, until the customer accepts the reduced

quantity or until the time shortfall is non-existent **(seller proposes to the buyer a promise to ship items at a certain quantity and date, the buyer thinks about the promise and either reissues an altered request to which the seller must generate a new promise, or the buyer or accepts the promise {which completes the negotiation [the negotiation process therefore being an iterative process]})** [Column 6, lines 26-42].

As per claim 40, Kennedy et al. teaches the computer-readable medium of claim 39, produced by the method further comprising:

communicating the reduced quantity **(seller proposes to the buyer a promise to ship items at a certain quantity and date, the buyer thinks about the promise and either reissues an altered request or accepts the promise)** [Column 6, lines 37-42].

Although Kennedy et al. does not explicitly teach the step of communicating the reduced quantity to a vendor production process, Kennedy relates in general to the fields of order fulfillment, order quoting, available-to-promise, purchasing, supplier management, supply chain management, and single- and multi-enterprise planning [Column 1, lines 6-12]. Thus, it is inherent that once an agreement has been made regarding a customer order (product mix and quantity), said order would be communicated to production and manufacturing facilities to begin processing of the customer order for fulfillment by the supply chain.

As per claim 46, Kennedy et al. teaches a computer implemented system and process for negotiating the sale of goods, thus inherently providing the use of a processor (computer) with software means, used to degrade the quantity of an order (negotiating a customer order to alter requested products and quantity) in reference to the probability of profits from each of the products in the order [abstract].

As per claim 47, Kennedy et al. teaches a computerized apparatus for production management comprising:

a demand analyzer, that determines if a vendor can satisfy a quantity of customer demand for a product **(decision process used to figure out whether fulfillment of a customer request is possible)**, from a database of process and inventory operation data and from a database of customer order data [Column 6, lines 30-32]; and

a graceful quantity degrader, operably coupled to the demand analyzer **{operating on the same computer or computer network}**, that yields a degraded quantity from the quantity of customer demand **(reissues an altered request, with lower quantities)** [Column 6, lines 26-42].

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller [Column 6, lines 26-28]. In addition, it has

been admitted as prior art, as a result of improperly and/or untimely challenged Official Notice, that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

Claim 54 recites limitations already addressed by the rejection of claim 47 above; therefore, the same rejection applies.

As per claim 48, Kennedy et al. fails to explicitly teach the computerized apparatus of claim 47, wherein the graceful quantity degrader yields the degraded quantity for each of the products that the customer indicated a reduced quantity thereof, from a time shortfall **(inability to fulfill customer request {due to a time-shortfall or insufficient production capabilities})**, the inverse probability of profit, and from a

decremented number of plurality of products **{effective quantity agreed upon after negotiation}** of the customer order.

It is mathematically inherent that the degraded quantity (i.e., the reduced quantity) can be computed by taking the difference between the initially requested quantity, and the final agreed-upon quantity.

Kennedy et al. does not teach the step of determining the degraded quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller [Column 6, lines 26-28]. In addition, it has been admitted as prior art, as a result of improperly and/or untimely challenged Official Notice, that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

Claim 55 recites limitations already addressed by the rejection of claim 48 above; therefore, the same rejection applies.

As per claim 49, Kennedy et al. teaches a computerized apparatus for production management comprising:

an excess quantity determiner **(decision process)**, that determines that one or more customer requests for a plurality of products, exceed a production capacity of the vendor **(filling customer request is possible {or not possible})** within a prescribed time period **{date associated with customer order}** [Column 3, lines 65-67, Column 6, lines 26-42]; and

a reduced quantity degrader, operably coupled to the excess quantity determiner **{operating on the same computer or computer network}**, that yields a reduced quantity **(reissues an altered request, with lower quantities)** [Column 6, lines 26-42].

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller [Column 6, lines 26-28]. In addition, it has been admitted as prior art, as a result of improperly and/or untimely challenged Official Notice, that it is old and well known in the manufacturing arts, that, when possible, manufacturers will seek to substitute requested products with similar products with higher profit margins. It would have been obvious to one of ordinary skill in the art at the

time of invention to modify the teachings of Kennedy et al. to take the profitability of products into consideration when determining the reduced quantity, because the resulting invention would result in increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

Claim 56 recites limitations already addressed by the rejection of claim 49 above; therefore, the same rejection applies.

7. Claims 4-18, 22-38, 41-45, 50-53, and 57-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. (U.S Patent #6,055,519) as applied to claims 13, 31, 39, 43, 49, and 56 above, and further in view of Eder (U.S Patent #5,615,109).

As per claim 4, Kennedy et al. teaches a computerized method for production management comprising:

(a) determining that at least one request for a plurality of products exceeds a production capacity of a vendor **(whether fulfillment of a customer request is possible)**, wherein the request for a plurality of products includes a quantity associated with each of the plurality of products from process and inventory operation data and

from customer order data **(customer request data regarding relevant items, quantities, and dates are stored)** [Column 3, line 64-67, Column 6, lines 30-31]; and

As per (b) determining a quantity of each of the plurality of products corresponding to a vendor maximum profit of the requests for a plurality of products, from a degradation of the quantity associated with at least one of the plurality of products as a function of the inverse of the probability of profit from the product:

Kennedy et al. does not teach the step of determining the reduced quantity based on an inverse profit probability, but does disclose that his invention is for the purpose of optimizing the profits of the seller [Column 6, lines 26-28]; thus, Kennedy et al., implicitly teaches the step of identifying of the most profitable products of a group of products that would enable the maximization of profits. In addition, it has been admitted as prior art, as a result of improperly and/or untimely challenged Official Notice, that it is old and well known in the manufacturing arts, that, when possible, manufacturers will identify the most profitable product in a set (usually by comparing the profit margins of each item), enabling them to seek ways to emphasize sales of that particular item or to substitute requested products with {similar} products with higher profit margins.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to take the probability of product profitability into consideration when determining the reduced quantity, because the

resulting invention would result in an instant analysis of potential increased revenues and profits (by selling more expensive and/or more profitable items) and the substitution of said items may enable manufacturers to meet customer demand, as it may require less production time, or is more readily available.

Although Kennedy et al. does not explicitly teach the step of determining the product quantity corresponding to maximum vendor profit, Eder teaches a profit maximized requisition set created by utilizing multi-objective {maximizing profit, matches production capacity} linear programming techniques [abstract].

Kennedy et al. is directed towards determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix based on the probability of profit of products that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

Claim 22 recites limitations already addressed by the rejection of claim 4 above; therefore, the same rejection applies.

As per claim 5, Kennedy et al. teaches the computerized method of claim 4, the method further comprising:

(c) communicating the quantity of each of the plurality of products corresponding to a maximum vendor profit of the requests for a plurality of products.

Although Kennedy et al. does not explicitly teach the step of communicating the reduced quantity to a production management process, Kennedy et al. relates in general to the fields of order fulfillment, order quoting, available-to-promise, purchasing, supplier management, supply chain management, and single- and multi-enterprise planning [Column 1, lines 6-12]. Thus, it is inherent to the teachings of Kennedy et al. that once an agreement has been made regarding a customer order (product mix and quantity), said order would be communicated to production and manufacturing facilities to begin processing of the customer order for fulfillment by the supply chain.

Claim 23 recites limitations already addressed by the rejection of claim 5 above; therefore, the same rejection applies.

As per claim 6, Kennedy et al. teaches the computerized method of claim 4, wherein the determining (a) further comprises:

(a)(2) obtaining customer order data, the data further comprising an identification of each of the plurality of products, a requested quantity of each of the plurality of

products, and an associated target time of each of the plurality of requested products **(data such as relevant items, quantities and dates)** [Column 3, lines 65-67]; and

(a)(5) deter mining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether fulfilling customer request is possible)**, from the effective quantity of the at least one of the plurality of products, from the requested quantity of the at least one of the plurality of products **(customer order requests)**, and from the target time of the at least one of the plurality of products **(customer order date)** [Column 3, lines 65-67, Column 6, lines 30-32].

Regarding (a)(1) obtaining process and inventory operation data, the data further comprising an inventory quantity for each of the plurality of products;

(a)(3) deter mining an effective quantity for each of the plurality of products to be produced from the requested quantity of each of the plurality of products and from the inventory quantity for each of the plurality of products; and

(a)(4) deter mining an actual time to produce all of the plurality of products to be produced, from the effective quantity for each of the plurality of products to be produced

It has been admitted as prior art, as a result of improperly and/or untimely challenged Official Notice, that it is old and well known in the manufacturing arts that manufacturers are able to assess inventory levels and production capacity (and performance). From this information, manufacturers can inherently determine the

quantity of products to be produced (the difference between requested quantity and available quantity) and the time required to produce said quantity of products.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Kennedy et al. to include the step of obtaining process and inventory operation data, because the resulting invention would enable manufacturers to assess the feasibility of fulfilling customer orders facilitating the need to negotiate a modified customer order such that the terms (date, products, and requested quantity) can be fulfilled.

Claims 16, 24, and 34 recite limitations already addressed by the rejection of claim 6 above; therefore, the same rejection applies.

As per claim 7, Kennedy et al. does not explicitly teach the computerized method of claim 6, wherein the obtaining (a)(1) action is performed after the obtaining (a)(2) action. However, it is inherent in the manufacturing arts that customer order requests (product plurality and quantity) must be received before being compared with existing inventory and production capacities in determining the likelihood of fulfillment.

Claim 25 recites limitations already addressed by the rejection of claim 7 above; therefore, the same rejection applies.

As per claim 8, Kennedy et al. teaches the computerized method of claim 6, wherein the determining (a)(5) further comprises:

(a)(5)(i) determining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** beyond a predetermined margin [Column 6, lines 26-42].

Claims 26 and 41 recite limitations already addressed by the rejection of claim 8 above; therefore, the same rejection applies.

As per claim 9, Kennedy et al. does not explicitly teach the computerized method of claim 6, wherein the determining (a)(5) further comprises:

(a)(5)(i) determining a batch objective value for producing and delivering each of the plurality of products, from the effective quantity of the at least one of the plurality of products, from the requested quantity of the at least one of the plurality of products;

(a)(5)(ii) determining the total production time of the plurality of products from the batch objective value of each of the plurality of products; and

(a)(5)(iii) comparing the target time to the total production time of the plurality of products.

Eder teaches the generation of feasible, profit maximized requisition sets created by utilizing multi-objective {maximizing profit, matches production capacity} linear programming techniques [abstract].

It is inherent in the manufacturing arts that profit (batch objective value) can be determined from the production batch size (effective quantity). It is further inherent in the manufacturing arts that the determination of production time is dependent on the quantity of products and production capacities. As the teachings of Eder generate feasible requisition sets, it is inherent that the required production time is compared to the target time, and that all solutions enable fulfillment of the customer order prior to the target time.

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

Claims 15, 27 and 33 recite limitations already addressed by the rejection of claim 9 above; therefore, the same rejection applies.

As per claim 10, Kennedy et al. does not explicitly teach the computerized method of claim 8, wherein the predetermined margin further comprises a predetermined absolute quantity margin.

Although Kennedy et al. does not explicitly teach the step of communicating the reduced quantity to a production management process, Kennedy et al. relates in general to the fields of order fulfillment, order quoting, available-to-promise, purchasing, supplier management, supply chain management, and single- and multi-enterprise planning [Column 1, lines 6-12]. Thus, it is inherent to the teachings of Kennedy et al. that manufacturers lack infinite production capacity and therefore have an absolute quantity predetermined by the number of available production facilities and limited resources.

Claims 17, 28, and 35 recite limitations already addressed by the rejection of claim 10 above; therefore, the same rejection applies.

As per claim 11, Kennedy et al. teaches the computerized method of claim 4, wherein determining (b) for each product in the order, further comprises:

determining that at least one request for a plurality of products exceeds a production capacity of a vendor beyond a predetermined margin **(whether fulfillment of a customer request is possible)** [Column 6, lines 30-31];

(b)(1) deter mining a time shortfall in the production of each of the plurality of products from actual time to produce all of the plurality of products to be produced **(figure out whether fulfilling customer request is possible {given requested products, quantities and date})**, and from the target time [Column 6, lines 26-38];

(b)(2) com municating to the customer each of the time shortfalls **{the seller submits a modified proposal generated due to an inability to fulfill the initial request}** [Column 6, lines 26-38];

(b)(3) receiving from t he customer information representing reduction in the quantity associated with at least one of the plurality of products **(reissued customer request)** [Column 6, lines 39-40];

(b)(5) determining a graceful decrement from the time shortfall, from the profit inverse probability, and from a decremented number of plurality of products [see analysis of claim 2 above];

As per (b)(4) determining an inverse profit probability from the profit of a production of one of the plurality of products in the customer order, and from the profit of all of the plurality of products in the customer order:

It is inherent in the manufacturing arts that the profitability of a particular product and corresponding inverse of profit probability (in comparison to other products comprising an order) can be determined (an analysis of production costs and sale price).

As per (b)(6) updating the objective value from the graceful decrement;

(b)(7) deter mining the actual quantity to be produced for each of the plurality of products, from the graceful decrement, and from a unit time of manufacture; and

(b)(8) deter mining an actual time to produce all of the plurality of products to be produced, from the actual quantity to be produced for each of the plurality of products:

Eder teaches the generation of feasible, profit maximized requisition sets created by utilizing multi-objective {maximizing profit, matches production capacity} linear programming techniques [abstract].

It is inherent that in the generation of an optimal solution set, each incremented (or decremented) quantity of a product requires an updating of the objective value (maximizing vendor profit, minimizing vendor costs, etc.). It is further inherent that the optimal solution set quantifies the actual production quantity for each of the plurality of products, and that the time required to produce the actual production quantity can be determined as a function of comparing production requirements with production capabilities.

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

Claims 18, 29, 36, 42, and 45 recite limitations already addressed by the rejection of claim 11 above; therefore, the same rejection applies.

As per claim 12, Kennedy et al. does not explicitly teach the computerized method of claim 11, wherein determining (b)(4), further comprises:

(b)(4)(i) diving the profit of a production of one of the plurality of products in the customer order into the profit of all of the plurality of products in the customer order, yielding a portion of total profit attributable to the one product; and

(b)(4)(ii) determining a profit probability from the portion of total profit attributable to the one product subtracted from (b)(4)(i).

It is inherent that the percentage of profits from a particular product in an order can be determined by dividing the profit of one product by the profit of all products. It is also inherent that the combined percentage of profitability of all products in an order must add to 100%, thus in an order comprising 2 products, the percentage profit of the second product is equal to 100% minus the percentage profit of the first product.

Claim 30 recites limitations already addressed by the rejection of claim 12 above; therefore, the same rejection applies.

As per claim 13, Kennedy et al. teaches a computerized method for production management comprising:

(a) determining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** wherein the request for a plurality of products includes a quantity associated with each of the plurality of products **(data representing relevant items, quantities, and dates of product requests)** from process and inventory operation data [Column 3, lines 65-67, Column 6, lines 26-42]

(c) determining a graceful decrement from the time shortfall **(the buyer considers the promise and either reissues an altered request, with lower quantities)**, from the inverse profit probability, and from a decremented number of

plurality of products **(an alternate plan, such as delivering fewer items {reducing the number of products requested})**;

(d) updating the objective value from the graceful decrement [see the analysis of claim 11(b)(6) above]

(e) determining the actual quantity to be produced for each of the plurality of products, from the graceful decrement [see the analysis of claim 11(b)(7) above]; and

(f) determining an actual time to produce all of the plurality of products to be produced, from the actual quantity to be produced for each of the plurality of products [see the analysis of claim 11(b)(8) above].

As per (b) determining an inverse profit probability from the profit of a production of one of the plurality of products in the request, and from the profit of all of the plurality of products in the customer order:

It is mathematically inherent that the percentage of profits from a particular product in an order can be determined by dividing the profit of one product by the profit of all products (i.e., percent of profit from product A = profit from product ÷ profit of all products). It is also mathematically inherent that the combined percentage of profitability of all products in an order must add to 100%, thus in an order comprising 2 products, the percentage profit of the second product is equal to 100% minus the percentage profit of the first product (i.e., in an order comprising product A and product B, the percentage of profitability of product A and the percentage of profitability of product B adds to 100%).

Claims 31, 37, and 43 recite limitations already addressed by the rejection of claim 13 above; therefore, the same rejection applies.

As per claim 14, Kennedy et al. teaches the computerized method of claim 13, wherein the determining (a) further comprises:

(a)(1) deter mining that at least one request for a plurality of products exceeds a production capacity of a vendor **(figure out whether filling that request is possible {due to a time-shortfall or insufficient production capabilities})** beyond a predetermined margin, from the requested quantity of the at least one of the plurality of products, and from the target time of the at least one of the plurality of products **(data such as relevant items, quantities, and dates)** [Column 3, lines 65-67, Column 6, lines 26-42].

Claims 32, 38, and 44 recite limitations already addressed by the rejection of claim 14 above; therefore, the same rejection applies.

As per claim 50, Kennedy et al. teaches the computerized apparatus of claim 49, wherein the excess quantity determiner further comprises:

a determiner of production time shortfall **(figure out whether fulfilling customer request is possible {given requested products, quantities and date})**, from the actual total production time, and a target production time **{customer order data}**,

wherein the production shortfall indicates an excess quantity [Column 3, lines 65-67, Column 6, lines 26-42].

Although not explicitly taught by Kennedy et al., Eder teaches a determiner of batch objective values, from an effective quantity of at least one product identified in the request; and from the corresponding production speed of each of a plurality of product batches in the request; and a determiner of actual total production time of the at least one products in the request, from the sum of the batch objective values.

It is inherent that in the generation of an optimal solution set using linear programming techniques, each incremented (or decremented) quantity of a product requires an updating of the objective value (maximizing vendor profit, minimizing vendor costs, etc.). It is further inherent that the optimal solution set quantifies the actual production quantity for each of the plurality of products, and that the time required to produce the actual production quantity can be determined as a function of comparing production requirements with production capabilities.

Kennedy et al. teaches a system of determining an order promise (products and quantities) for fulfilling customer orders used to optimize profits of the seller. Eder teaches a system of generating feasible, profit maximizing requisition sets directed to the analogous art of inventory management; thus, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Kennedy et

al. and Eder because the combination would result in a system yielding a feasible and maximally profitable product mix that the manufacturer could propose to the buyer, hastening the process of determining a modified customer order, while maximizing profits and ensuring order fulfillment.

Claim 57 recites limitations already addressed by the rejection of claim 50 above; therefore, the same rejection applies.

As per claim 51, Kennedy et al. teaches the computerized apparatus of claim 49, wherein the reduced quantity determiner further comprises:

a gracefully-decremented quantity determiner, operably coupled to the inverse profit probability determiner, wherein the gracefully-decremented quantity is determined for each of the products that the customer indicated a reduced quantity, and determined from a time shortfall, the inverse profit probability, and from a decremented number of plurality of products [see analysis of claim 11(b)(5) above];

Kennedy et al. does not explicitly teaches the step of determining an inverse profit probability, wherein the inverse profit probability is determined from a projected profit of a product in the customer request, and from the profit of the entire customer request.

However, it is inherent that only products in the customer request impact its profitability; in other words, products not in the product order have 0% probability of profit.

Although not explicitly taught by Kennedy et al., Eder teaches an objective-value determiner **(linear programming techniques)**, operably coupled to the gracefully-decremented quantity determiner, wherein the objective-value is determined for each product in the customer order **{dependent on the objective value; for instance, if the objective value is to maximize profit, the object value for each product is equivalent to the unit profit margin}** from the gracefully-decremented quantity, and from the previous objective value **{measured as the change in objective value from increasing/decreasing quantity of a particular product}** [abstract];

an actual-quantity determiner **(linear programming techniques)**, operably coupled to the objective-value determiner **{located on the same computer, or network of computers}**, wherein the actual-quantity is determined from the objective value **{the optimal solution generated by the linear programming techniques yields a product quantity associated with the maximum objective value}**, a production speed of the product, and from the inventory quantity of the product **{constraints taken into consideration in linear programming techniques}**; and

a total-production-time determiner **(linear programming techniques)**, operably coupled to the actual-quantity determiner **{located on the same computer, or network of computers}**, wherein the total-production-time is determined as the sum of objective

value of each product **{the production time required for a single unit of every product is known; the linear programming techniques determines the quantity of products required; thus, the total production time is the product of the quantity of products with the production time per unit. Alternatively, the objective function may be to minimize production time; in this case, the objective value of each product is the production time per unit}**.

Claim 58 recites limitations already addressed by the rejection of claim 51 above; therefore, the same rejection applies.

As per claim 52, Kennedy et al. teaches a computerized apparatus for production management comprising:

an excess quantity determiner **(decision process)**, that determines that one or more customer requests for a plurality of products exceed a production capacity of the vendor **(filling customer request is possible {or not possible})** within a prescribed time period **{date associated with customer order}** [Column 3, lines 65-67, Column 6, lines 26-42]; and

a reduced quantity determiner, operably coupled to the excess quantity determiner **{operating on the same computer or computer network}**, that yields a reduced quantity **(reissues an altered request, with lower quantities)** [Column 6, lines 26-42], from an inverse probability of profit of the reduced quantity, wherein the reduced quantity determine further comprises:

a gracefully-decremented quantity determiner, yielding a reduced quantity, operably coupled to the inverse profit probability determiner, wherein the gracefully-decremented quantity is determined for each of the products that the customer indicated a reduced quantity, and determined from a time shortfall, the inverse probability of profit, and from a decremented number of plurality of products [see analysis of claims 2 and 13(c) above].

Claim 59 recites limitations already addressed by the rejection of claim 52 above; therefore, the same rejection applies.

As per claim 53, Kennedy et al. does not explicitly teaches the computerized apparatus of claim 52, wherein the inverse profit probability is determined from a projected profit of a product in the customer request, and from the profit of the entire customer request.

However, it is inherent that only products in the customer request impact its profitability; in other words, products not in the product order have 0% probability of profit in said product order. Similarly, it is inherent that the percentage of profits from a particular product in an order can be determined by dividing the profit of one product by the profit of all products. It is also inherent that the combined percentage of profitability of all products in an order must add to 100%, thus in an order comprising 2 products,

the percentage profit of the second product is equal to 100% minus the percentage profit of the first product.

Claim 60 recites limitations already addressed by the rejection of claim 53 above; therefore, the same rejection applies.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Choi whose telephone number is (571) 272 6971. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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PC

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